

The invention claimed is

**[0001]** 1. (Currently Amended) A nanocomposite produced by the process comprising:

dissolving a metal ionsalt in a solvent system to form a metal ion salt solution, wherein said solvent system is common to said metal ion salt and a polymer;

adding an epoxide to said metal ion salt solution to form an epoxide-containing metal ion salt solution;

dissolving said polymer in said solvent system to form a polymer solution;

adding a portion of the polymer solution to the polymer-containing metal ion salt solution to form a polymer-containing, epoxide-containing metal ion salt solution; and

stirring said a polymer-containing, epoxide-containing metal ion salt solution until said solution gels.

**[0002]** 2. (Currently Amended) The nanocomposite produced by the process recited in Claim ~~10~~ 1, further comprising:

adding a fuel metal powder to said polymer-containing, epoxide-containing metal ion salt solution while stirring, wherein said addition of the fuel metal powder occurs before said polymer-containing, epoxide-containing metal ion salt solution gels.

**[0003]** 3. (Currently Amended) The nanocomposite recited in Claim ~~10~~ 1, wherein said metal oxide is Fe<sub>2</sub>O<sub>3</sub>.

{0004} 4. (Currently Amended) The nanocomposite produced by the process recited in Claim 1, wherein said polymer is a fluoroelastomer.

{0005} 5. (Currently Amended) The nanocomposite produced by the process recited in Claim 2, wherein said fluoroelastomer is Viton®A, A-100.

{0006} 6. (Currently Amended) The nanocomposite produced by the process recited in Claim 1, wherein Viton®A, A-100 is soluble in said solvent system.

{0007} 7. (Currently Amended) The nanocomposite produced by the process recited in Claim 1, wherein said solvent system is a mixture of ethanol and acetone.

{0008} 8. (Currently Amended) The nanocomposite produced by the process recited in Claim 2, wherein said fuel metal powder is Al, Mg, B, Ti, Zr or mixtures thereof.

{0009} 9. (Currently Amended) The nanocomposite produced by the process recited in Claim 2, wherein said fuel metal powder is ultra fine grain aluminum.

{0010} 10. (Currently Amended) A nanocomposite comprising:  
an inorganic sol-gel polymer phase comprising at least one metal-oxide  
and at least one epoxide; and  
an interpenetrating organic polymer phase entwined in said inorganic sol-gel phase.

~~{00011}~~ 11. (Currently Amended) The nanocomposite recited in Claim ~~19~~ 10, wherein said inorganic sol-gel polymer phase further comprises:

A fuel metal powder.

~~{00012}~~ 12. (Currently Amended) The nanocomposite recited in Claim ~~19~~ 10, wherein said metal oxide is  $\text{Fe}_2\text{O}_3$ .

~~{00013}~~ 13. (Currently Amended) The nanocomposite recited in Claim ~~19~~ 10, wherein said polymer is a fluoroelastomer.

~~{00014}~~ 14. (Currently Amended) The nanocomposite recited in Claim ~~22~~ 13, wherein said fluoroelastomer is Viton®A, A-100 .

~~{00015}~~ 15. (Currently Amended) The nanocomposite recited in Claim ~~20~~ 11, wherein said fuel metal powder is Al, Mg, B, Ti, Zr or mixtures thereof.

~~{00016}~~ 16. (Currently Amended) The nanocomposite recited in Claim ~~20~~ 11, wherein said fuel metal powder is ultra fine grain aluminum.